Honors Chemistry Research Project Requirements

The goal of this project is to examine a chemical reaction by making stoichiometric predictions, conducting an experiment of your own design which includes the isolation of one of the products of the reaction and statistically analyzing your success.

* All of your materials will be kept in a research folder in the classroom to allow for easy access by each person in the research group as well as the teacher.
* A research checklist will be kept in your folder at all times to keep you apprised of the specific requirements for the project and their due dates. A copy of this form can be found on the wiki and dates are likewise posted on the wiki calendar.

**Phase I – Pre-experimentation (20pts)**

Prior to conducting the experiment, each research group must turn in the following items. Each item has an initial due date and a final due date with time for revisions before the work is graded:

* 3 balanced chemical equations (including physical states) for which one of the products could be isolated. On the back of this form you will find the chemicals that will be available for your use.
* After selecting one of the 3 reactions to perform, you will stoichiometrically predict the quantity of reactants required given the guidelines below and predict the amount of product you would isolate. These calculations must be placed in your folder.
  + 1-3g of solid chemical/reactant/trial
  + 10-30 mL of aqueous chemical/reactant/trial
* Hypothesis written in “if,then” form
* MSDS sheets and Safety Summary form (see form in folder)
  + For each reactant and product in the chosen reaction, each group must print out MSDS sheets from the internet.
  + After highlighting the required information on the MSDS sheets, the information must be summarized on the Safety Summary form.
* A flow chart of your procedure including a decision making step and a minimum of 3 observation arrows.

**Phase II - Experimentation**

Upon successful completion of the pre-experimentation requirements, students may begin experimentation. You will have time in class to experiment and can work outside of class if you wish.

**Phase III - Post –experimentation Paper (80pts)**

Specifics requirements and point values for the individual sections of the paper can be found on the Research Summary Checklist/Grade sheet. Included in your folder is also a more detailed rubric for the report. Reports must be typed including reactions and calculations.

On the final due date, your paper and all the original materials from the pre-experimentation phase of your experiment (including this form) must be turned in simultaneously in your research folder.